

Application No. 10/697,574
Filed: October 30, 2003
TC Art Unit: 2652
Confirmation No.: 8327

THE SPECIFICATION

Please amend the Title on page 1, above line 5 and the Preliminary Amendment, as follows:

DISK DRIVE WITH PROTECTION FROM STATIC ELECTRICITY

Amend the paragraph on page 1, lines 15-24, as follows:

In general, a disk drive for driving an optical disk is integrally built in ~~an~~ a device body such as a personal computer (hereafter referred to as PC), in which information is recorded in or reproduced from the optical disk (for example, refer to Patent Documents 1 and 2). Fig. 18 shows the appearance of a notebook PC having the built-in disk drive described above. Normally, in such disk drive, a disk tray 101 pops out in accordance with a switch operation or a command from a PC body and a PC user then takes out the disk tray 101 so as to set an optical disk D.

Amend the paragraph on page 2, lines 2-16, as follows:

Fig. 30 is an exploded perspective view showing a configuration of the front end face of the disk tray 101, in which a printed wiring sheet P is adhered to the center of the front end face of the body of the disk tray 101, and a microswitch 109 for receiving an activation signal for controlling forward and backward movements of the disk tray 101 and an ~~ED~~ LED chip 100 serving as an indicator are soldered to the printed wiring sheet P. Moreover, a bezel 111 screwed so as to cover the front end face of the disk tray 101 to outfit the front face of the disk drive is provided with a push button 120 for operating the microswitch 109

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LED chip 100. Symbol 140 denotes a through-hole for forcibly canceling an unexpected locked state of the disk tray 101 by inserting a thin pin from the through-hole 140.

Amend the paragraph on page 4, line 33, to page 5, line 8, as follows:

To solve the above problems, according to ~~claim 1 of the~~ present invention, a disk drive is constituted by a chassis case, a disk tray capable of moving between a loading position inside the chassis and an unloading position outside the chassis case while supporting a recording medium, a bezel attached to the disk tray so as to cover the front end face of the disk tray, and an earth plate attached to the front end face of the disk tray to discharge static electricity; and is constituted so that the static electricity generated at the front side of the disk tray is guided to the earth plate.

Amend the paragraph on page 5, lines 9-12, as follows:

According to ~~claim 2 of the~~ present invention, ~~the disk drive of claim 1 in which~~ the disk tray supports a supporting rotation means of a disk which rotates while supporting the disk.

Amend the paragraph on page 5, lines 13-17, as follows:

According to ~~claim 3 of the~~ present invention, the disk drive ~~of claim 1~~ further includes an operating means to be operated when moving the disk tray located at the loading position toward the unloading position, and the earth plate is set adjacently to the operating means.

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Amend the paragraph on page 5, lines 18-21, as follows:

According to ~~claim 4~~ of the present invention, the disk drive of ~~claim 1~~ further includes an electrical display means for showing an operation state of the drive, and the earth plate is set adjacently to the electrical displaying means.

Amend the paragraph on page 5, lines 22-27, as follows:

According to ~~claim 5~~ of the present invention, in the disk drive of ~~claim 1~~, the chassis case has conductivity and the earth plate is electrically connected to the chassis case when the disk tray is located at the loading position to supply static electricity generated at the front side of the disk tray to the chassis case.

Amend the paragraph on page 5, lines 28-31, as follows:

According to ~~claim 6~~ of the present invention, in the disk drive of ~~claim 1~~, the disk tray is provided with an earth plate attaching portion to which the earth plate is attached and a bezel attaching portion to which the bezel is attached.

Amend the paragraph on page 5, line 32, to page 6, line 2, as follows:

According to ~~claim 7~~ of the present invention, in the disk drive of ~~claim 1~~, the earth plate fixed to the disk tray so as to cover at least a part of the front end face of the disk tray is exposed to the front end of the disk tray when taking out the bezel from the disk tray.

Amend the paragraph on page 6, lines 3-9, as follows:

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According to ~~claim 8~~ of the present invention, in the disk drive of ~~claim 1~~, the disk tray is constituted by a disk tray main body and an inner bezel attached to the front end face of the disk tray, the earth plate is set between the disk tray main body and the inner bezel, and the bezel is attached to the front end of the disk tray so as to cover the inner bezel of the disk tray.

Amend the paragraph on page 6, lines 10-12, as follows:

According to ~~claim 9~~ of the present invention, in the disk drive of ~~claim 8~~, the bezel formed like a plate is fixed to the inner bezel of the disk tray.

Amend the paragraph on page 6, lines 13-15, as follows:

According to ~~claim 10~~ of the present invention, in the disk drive of ~~claim 8~~, the bezel formed like a shallow pan is fitted to the inner bezel of the disk tray.

Amend the paragraph on page 6, lines 16-25, as follows:

According to ~~claim 11~~ of the present invention, the disk drive is constituted by the chassis case, the disk tray capable of moving between the loading position inside the chassis case and the unloading position outside the chassis case while supporting the recording medium and having the bezel attaching portion end to be able to attach the bezel on the front end, and an earth plate attached to the front end face of the disk tray to discharge static electricity, and in which the static electricity generated at the front side of the disk tray is guided to the earth plate.

Amend the paragraph on page 6, lines 26-29, as follows:

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According to ~~claim 12 of~~ the present invention, in the disk drive ~~of claim 11~~, the disk tray supports the supporting rotation means of the disk which rotates the disk while supporting it.

Amend the paragraph on page 6, lines 30-34, as follows:

According to ~~claim 13 of~~ the present invention, the disk drive ~~of claim 11~~ further includes the operating means to be operated when moving the disk tray located at the loading position toward the unloading position and in which the earth plate is set adjacently to the operating means.

Amend the paragraph on page 7, lines 1-5, as follows:

According to ~~claim 14 of~~ the present invention, the disk drive ~~of claim 11~~ further includes the electrical displaying means for showing an operation state of the drive and in which the earth plate is set adjacently to the electrical displaying means.

Amend the paragraph on page 7, lines 6-11, as follows:

According to ~~claim 15 of~~ the present invention, in the disk drive ~~of claim 11~~, the chassis case has conductivity and the earth plate is electrically connected to the chassis case when the disk tray is located at the loading position to supply the static electricity generated at the front side of the disk tray to the chassis case.

Amend the paragraph on page 7, lines 12-16, as follows:

According to ~~claim 16 of~~ the present invention, in the disk drive ~~of claim 11~~, the disk tray is constituted by the disk tray body and the inner bezel attached to the front end of the disk

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tray body, and the earth plate is set between the disk tray body and the inner bezel.

Amend the paragraph on page 7, lines 17-28, as follows:

According to ~~claim 17~~ of the present invention, a disk drive manufacturing method comprises a step of integrating the disk tray with the earth plate and a step of integrating the bezel with the front end of the disk tray integrated with the earth plate, in which the disk drive includes the chassis case, the disk tray capable of moving between the loading position inside the chassis case and the unloading position outside the chassis case while supporting the recording medium, the bezel attached to the disk tray so as to cover the front end of the disk tray, and the earth plate set to the front end side of the disk tray to discharge static electricity.

Amend the paragraph on page 7, line 29, to page 8, line 2, as follows:

According to ~~claim 18~~ of the present invention, in the disk drive manufacturing method ~~of claim 17~~, the disk tray is constituted by the disk tray body and the inner bezel attached to the front end of the disk tray body, and the step of integrating the disk tray with the earth plate includes a step of integrating the inner bezel with the earth plate and a step of integrating the inner bezel integrated with the earth plate with the disk tray body.

Amend the paragraph on page 13, line 29, to page 14, line 5, as follows:

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WEINGARTEN, SCHURGIN,
GAGNEBIN & LITSOVICK LLP
TEL. (617) 242-2290

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Then, the disk tray 1, a side arm 1c for housing a slider mechanism C to be described later is integrally formed at one side of the front end face and moreover, a bezel 8 is set to the front end face of the disk tray 1 so as to insert a tongue 8a of the bezel 8 into an insertion hole 1d of the disk tray 1. ~~Symbol 8~~ Symbol 8b denotes a through-hole into which an operation pin is inserted in order to forcibly cancel (emergency-eject) the locked state at emergency of an ejecting/locking mechanism in the disk tray 1, symbol 8c denotes an indicator display window, and symbol 8d denotes an operation button for unloading the disk tray 1.

Amend the paragraph on page 19, lines 22-29, as follows;

Then, a configuration and operation modes of the ejecting/locking mechanism B used for the disk drive of the present invention are described below. The ejecting/locking mechanism B is used to fix a state in which the disk tray 1 is loaded in the chassis case 10 or cancel the fixed state so that the disk tray 1 can be unloaded, which is constituted by combining a ~~self-holing~~ self-holding solenoid 27, a cancel lever 28, a lock lever 29, and a return lever 30.

Amend the paragraph on page 21, lines 2-12, as follows:

Therefore, the present invention is constituted in accordance with the insert molding in which a resin main ~~portion~~ portion 29a includes a steel sheet mold material 29b. As shown in Fig. 9, the steel sheet mold material 29b is inserted into a front end and a portion most requiring rigidity is reinforced. Then, ends of the steel sheet mold material 29b are exposed from the synthetic resin portion, so that the slide contact resistance with the lock pin 32

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lowers. Furthermore, an activation end 29c and a slope face (face to be driven) 29d for the forcible cancellation are formed at the rear end of the lock lever 29.

Amend the paragraph on page 26, lines 21-33, as follows:

Fig. 21 is an exploded perspective view for explaining a configuration of a second embodiment of the present invention. As shown in Fig. 21, a bezel 170 is constituted by an inner bezel 180 and an outer bezel 190. The inner bezel 180 and the outer bezel 190 are integrated and attached to the front end face of the disk tray 101. As shown in Fig. 22, a securing nail 180a for fixing the inner bezel 180 to the disk tray 101 is formed at essential portions of the inner bezel 180 and a securing through-hole 101b corresponding to each securing nail ~~180~~ 180a is formed at the front end face of the disk tray 101. By inserting the securing nails 180a into the securing through-holes 101b, the inner bezel 180 is fixed to the front end face of the disk tray 101.

Amend the paragraph on page 29, lines 25-34, as follows:

Thus, the second and third embodiments of the present invention respectively use the configuration in which the push button is attached to the inner bezel and the ~~wind~~ window hole is formed on the outer bezel so as to expose the head of the push button to the surface of the outer bezel. However, as shown in Fig. 29, it is also allowed to attach the push button 120 to the outer bezel 190 and form the window hole 180e on the inner bezel, so that the push button 120 operates the microswitch 109 through the window hole 180e of the inner bezel.